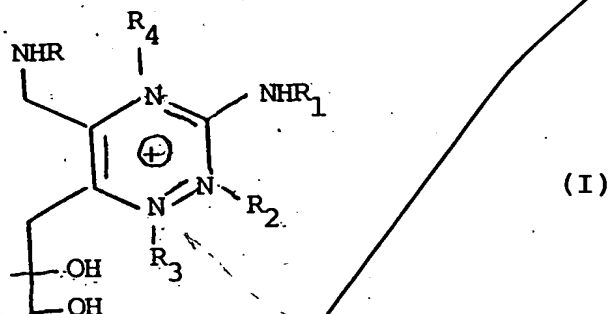
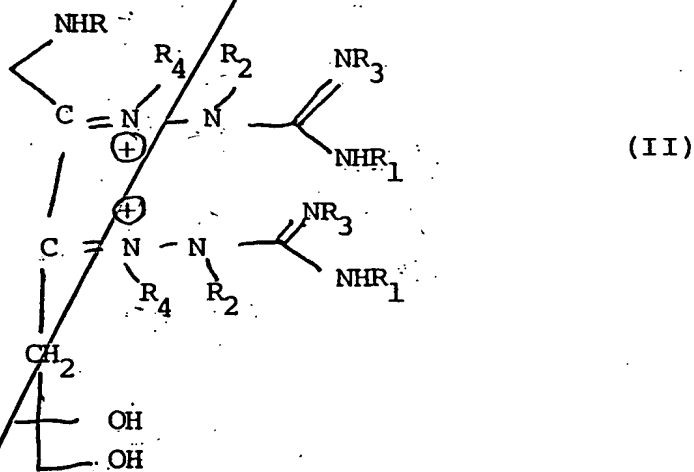


WHAT IS CLAIMED IS:

- 1 1. A compound selected from the group consisting of
 2 compounds of the formula



13
14
15 and



29 wherein R is a lower alkyl group of 1 to 6 carbon atoms;

30 R₁ is hydrogen or a lower alkyl group of 1-6 carbon
 31 atoms, amino, or hydroxy, or together with R₂ represent a
 32 lower alkylene bridge of 2-4 carbon atoms;

33 R₂ is hydrogen, or a lower alkyl group of 1-6 carbon
 34 atoms, a hydroxyethyl group or R₂ may be taken together
 35 with R₁ as noted above;

36 R_3 is hydrogen, a lower alkyl group of 1-6 carbon
37 atoms or may be together with R_1 a lower alkylene bridge
38 of 2-4 carbon atoms;

39 and R_4 is hydrogen, a lower alkyl group of 1-6 carbon
40 atoms or together with R_3 is a lower alkylene bridge of 2-
41 4 carbon atoms; and their pharmaceutically acceptable
42 salts.

1 2. A compound according to Claim 1 wherein R is lower
2 alkyl and R_1 , R_2 , R_3 and R_4 are each hydrogen, and their
3 pharmaceutically acceptable salts.

a
1 3. The compound according to Claim 1 which is 3-amino-
2 5-propylaminomethyl-6-(2',3'-dihydroxypropyl)-1,2,4-
3 triazine or a pharmaceutically acceptable salt thereof.

1 4. The compound according to Claim 1 which is 1-
2 propylamino-2,3-diaminoguanidine-1,4-dideoxyglucosone
3 dihydrazone or a pharmaceutically acceptable salt
4 thereof.

1 5. A test kit for the detection of the glycosylation
2 products of polypeptides, comprising:

- 3 a. a predetermined amount of a labeled compound of
4 formula I or II or the binding partner specific thereto;
5 b. other reagents; and
6 c. directions for use of said kit.

1 6. A test kit to be used for the detection and/or
2 determination of one of the components selected from the
3 group consisting of glycosylation products of
4 polypeptides, and the specific binding partners thereto,
5 according to a predetermined protocol, comprising:
6 a. a labeled component which has been obtained by
7 coupling a compound of formula I or II to a detectable
8 label;

31

9 b. one or more additional immunochemical reagents
 10 of which at least one reagent is a ligand or an
 11 immobilized ligand, which ligand is selected from the
 12 group consisting of:

13 i. a ligand capable of binding with the
 14 labeled component (a);

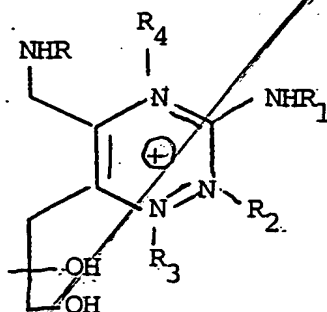
15 (ii) a ligand capable of binding with a binding
 16 partner of the labeled component (a);

17 (iii) a ligand capable of binding with at least
 18 one of the component(s) to be determined; and

19 (iv) a ligand capable of binding with at least
 20 one of the binding partners of at least one of the
 21 component(s) to be determined; and

22 c. directions for the performance of a protocol
 23 for the detection and/or determination of one or more
 24 components of an immunochemical reaction between the
 25 advanced glycosylation end product and a specific binding
 26 partner thereto.

1 ⁴7. An indicator composition for use in an assay
 2 procedure for the detection of advanced glycosylation
 3 endproducts in polypeptide samples, said composition
 4 comprising a compound selected from the group consisting
 5 of compounds of the formula



T0320X

1 sub B3

19 and

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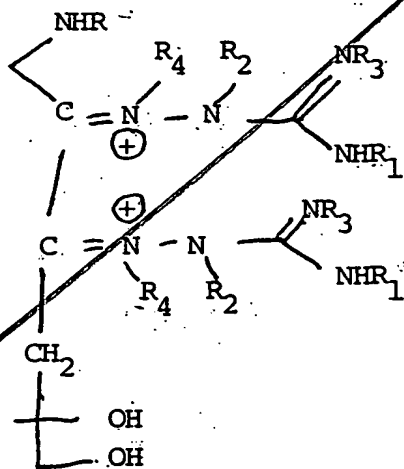
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34 wherein R is a lower alkyl group of 1 to 6 carbon
35 atoms;

36 R₁ is hydrogen or a lower alkyl group of 1-6 carbon
37 atoms, amino, or hydroxy, or together with R₂ represent a
38 lower alkylene bridge of 2-4 carbon atoms;

39 R₂ is hydrogen, or a lower alkyl group of 1-6 carbon
40 atoms, a hydroxyethyl group or R₂ may be taken together
41 with R₁ as noted above;

42 R₃ is hydrogen, a lower alkyl group of 1-6 carbon
43 atoms or may be together with R₁ a lower alkylene bridge
44 of 2-4 carbon atoms;

45 and R₄ is hydrogen, a lower alkyl group of 1-6 carbon
46 atoms or together with R₃ is a lower alkylene bridge of 2-
47 4 carbon atoms; and their pharmaceutically acceptable
48 salts.

1 ⁵ 8. An indicator composition according to Claim ⁴ for
2 use in an assay procedure for the detection of advanced
3 glycosylation endproducts in polypeptide samples, said
4 composition comprising a compound which is a 3-amino-5-

5 alkylaminomethyl-6-alkyl-1,2,4-triazine of the formula (I/a)

6 ~~or a dihydrazone of 1,4-dideoxyglucose of the formula II.~~

1 9. The indicator of Claim 7 having associated therewith
2 a detectable label.

1 10. The indicator of Claim 9 wherein the label is an
2 enzyme.

1 11. The indicator of Claim 10 wherein the label is
2 selected from peroxidase, β -glucuronidase, β -D-
3 glucosidase, β -D-galactosidase, urease, glucose oxidase
4 plus peroxidase, galactose oxidase plus peroxidase, and
5 acid phosphatase.

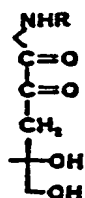
1 12. The indicator of Claim 9 wherein said label is a
2 radioactive element.

1 13. The indicator of Claim 12 wherein said radioactive
2 element is selected from the group consisting of ^{14}C , ^{125}I ,
3 ^{131}I , ^{35}S and ^3H .

1 14. The indicator of claim 9 wherein said label is a
2 chemical which fluoresces when exposed to ultraviolet
3 light.

1 15. The indicator of Claim 14 wherein said chemical is
2 selected from fluorescein, rhodamine, and auramine.

1 16. A method for the preparation of compounds of
2 formulae I and II comprising non-enzymatically reacting,
3 under physiological conditions, a 1-alkylamino-1,4-
4 dideoxyosone of the formula



(III)

1 20. A method for measuring the amount of advanced
2 glycosylation endproducts in a protein sample comprising
3 measuring the presence and amount of a compound of Claim
4 1.

1 21. A method of crosslinking proteins by reacting said
2 proteins with a compound of Claim 1.

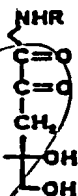
1 22. A method of quantitating proteins in a biological
2 sample by measuring the reactivity of the proteins with a
3 known amount of a compound of Claim 1.

1 23. A method of increasing the immunogenicity of an
2 antigen which comprises crosslinking said antigen with a
3 compound of Claim 1.

1 ⁶24. A composition for promoting the sequestration and
2 removal from the body of an animal of target
3 macromolecules that have undergone advanced glycosylation
4 comprising a compound of Claim 1 capable of causing the
5 body to increase its activity of recognizing and removing
6 said macromolecules.

a 1 ⁷25. The composition of Claim ~~41~~^{24 6} wherein said compound is
2 bound to a carrier.

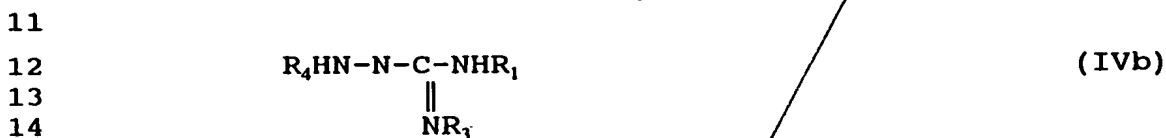
1 26. A method for the preparation of advanced
2 glycosylation endproducts which comprises the
3 nonenzymatic reaction of a compound of the formula
4



(III)

10 wherein R is a lower alkyl group, under physiological
11 conditions.

9 wherein R is a lower alkyl group;
 10 with aminoguanidine or an analog of the formula



16 wherein R₁ is hydrogen or a lower alkyl group of 1-6
 17 carbon atoms, amino, or hydroxy, or together with R₂
 18 represent a lower alkylene bridge of 2-4 carbon atoms;

19 R₂ is hydrogen, or a lower alkyl group of 1-6 carbon
 20 atoms, a hydroxyethyl group or R₂ may be taken together
 21 with R₁ as noted above;

22 R₃ is hydrogen, a lower alkyl group of 1-6 carbon
 23 atoms or may be together with R₁ a lower alkylene bridge
 24 of 2-4 carbon atoms; and

25 R₄ is hydrogen, a lower alkyl group of 1-6 carbon
 26 atoms or together with R₃ is a lower alkylene bridge of 2-
 27 4 carbon atoms;

28 and their pharmaceutically acceptable salts.

1 17. A method for measuring the amount of aminoguanidine
 2 or its analogs in a protein sample comprising measuring
 3 the presence and amount of a compound of Claim 1.

1 18. A method of detecting an aminoguanidine allergy in
 2 humans comprising testing the serum of the patient to
 3 determine the presence of antibodies to a compound of
 4 Claim 1.

1 19. A method for removing advanced glycosylation
 2 endproducts from the body by administering the anti-
 3 antibody or second binding partner to a compound of Claim
 4 1 to form an immune complex activating the animal's
 5 cellular clearance system (macrophages) to remove said
 6 immune complex and associated AGEs (advanced
 7 glycosylation endproducts).